

WASHINGTON DEPARTMENT OF ECOLOGY
ENVIRONMENTAL ASSESSMENT PROGRAM
FRESHWATER MONITORING UNIT
STREAM DISCHARGE TECHNICAL NOTES

STATION ID: 32B075
STATION NAME: Touchet River at Cummins Road
WATER YEAR: WY 2007
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Introduction

Watershed Description

The Touchet River is the largest tributary of the Walla Walla River in southeastern Washington. Its headwaters lie in the Blue Mountains above the town of Dayton in Columbia County. The main river is formed by the confluence of the North and South Forks.

Land use is primarily agricultural, consisting of dryland crops and irrigated farming in the lower portions.

Spring Chinook, steelhead, and bull trout are present within the watershed.

Gage Location

The gage is located on the left bank, directly upstream of the Cummins Road bridge crossing, one mile north of Touchet, Washington. It is located at river mile 3.0.

Table 1.

Drainage Area (square miles)	780 (USGS)
Latitude (degrees, minutes, seconds)	46° 03' 24" N
Longitude (degrees, minutes, seconds)	118° 40' 03" W

Discharge

Table 2. Discharge Statistics.

Mean Annual Discharge (cfs)	165
Median Annual Discharge (cfs)	102
Maximum Daily Mean Discharge (cfs)	1380
Minimum Daily Mean Discharge (cfs)	1.30
Maximum Instantaneous Discharge (cfs)	2090
Minimum Instantaneous Discharge (cfs)	1.30
Discharge Equaled or Exceeded 10 % of Recorded Time (cfs)	420
Discharge Equaled or Exceeded 90 % of Recorded Time (cfs)	1.54
Number of Days Discharge is Greater Than Range of Ratings	1
Number of Days Discharge is Less Than Range of Ratings	51

Note: Statistics displayed in Table 2 may not include values in which the predicted discharge exceeds the range of ratings.

Narrative

Peak flow occurred on January 4, 2007, resulting from a rain on snow event. The lowest flow of the water year occurred in mid-August 2007.

Error Analysis

Table 3. Error Analysis Summary.

Logger Drift Error (% of discharge)	0.60
Weighted Rating Error (% of discharge)	12.1
Total Potential Error (% of discharge)	12.7

Rating Table(s)

Table 4. Rating Table Summary

Rating Table No.	#8	#9	
Period of Ratings	10/01/06 to 1/8/07	1/04/07 to 9/30/07	
Range of Ratings (cfs)	3.9 to 2570	1.3 to 4930	
No. of Defining Measurements	7	22	
Rating Error (%)	10.3	12.7	

Rating Table No.			
Period of Ratings			
Range of Ratings (cfs)			
No. of Defining Measurements			
Rating Error (%)			

Rating Table No.			
Period of Ratings			
Range of Ratings (cfs)			
No. of Defining Measurements			
Rating Error (%)			

Narrative

A significant rain on snow event led to the shift from rating 8 to rating 9. Six discharge measurements were taken throughout the water year, ranging from 2.30 to 229 cfs. Measurement #32 was not used in any rating development.

Stage Record

Table 5. Stage Record Summary

Minimum Recorded Stage (feet)	1.44
Maximum Recorded Stage (feet)	9.77
Range of Recorded Stage (feet)	8.33
Number of Un-Reported Days	12
Number of Days Qualified as Estimates	5
Number of Days Qualified as Unreliable Estimates	0

Narrative

The unreported were caused by ice-impacted data. The estimated days were the period immediately after the ice-impacted data. This extends to the next site visit in which an ice-free, manual primary gage reading could be taken.

There were a few times throughout the water year where the staff gage was iced-in or under water and thus unreadable. In these situations, the staff reading was calculated from a staff gage/secondary gage regression. The secondary gage at this site is a tapedown from the bridge.

Modeled Discharge

Table 6. Model Summary

Model Type (Slope conveyance, other, none)	Slope Conveyance
Range of Modeled Stage (feet)	8.0 to 4930
Range of Modeled Discharge (cfs)	1620 to 4930
Valid Period for Model	1/8/07 to 9/30/07
Model Confidence	3.4%

Surveys

Table 7. Survey Type and Date (station, cross section, longitudinal)

Type	Date
n/a	n/a

Activities Completed

Installed laser level pad and associated reference marks.